Purpose of Chapter 6

The information presented in this chapter highlights some of the more significant environmentally sensitive areas within the GRP region that could be impacted as a result of an oil spill. Consistent with the overall purpose of the GRP's, this information is only intended to provide a level of detail required during the initial phase of spill response. During an actual event, additional resource information will be available from the resource trustee agencies supporting the Environmental Unit in the Planning Section. Specific resource concerns for areas that already have designated protection strategies in Chapter 4 of the GRP may be found in the "Resources Protected" column in the matrix describing the individual strategies.

The information provided in Chapter 6 is intended for use in:

- o Preparing an initial ICS 232 form (Resources-at-Risk summary) for Incident Command
- o Identifying those sites where it may be necessary to implement Flight Restriction Zones in order to prevent disturbance/injury to sensitive wildlife species.
- o Identifying sensitive shoreline habitats to assist SCAT teams in their initial assessments and to help personnel in the Environmental Unit in developing appropriate cleanup strategies.

Chapter 6 consists of two sets of maps and tables - one for wildlife and the other for fish, shellfish and selected sensitive marine habitats. These data are presented separately, both for ease of reading and because each of the two data sets has slightly different applications within the context of spill response.

The wildlife maps and tables present information on the location and seasonal sensitivity of key wildlife resources. Types of data included here are concentration areas for waterfowl, marine birds and shorebirds; seabird colonies; nesting areas for sensitive species such as eagles, herons and falcons; and marine mammal haulout sites. This information is intended for the rapid identification of areas where significant wildlife oiling impacts could be anticipated and to denote areas where flight restriction zones may be required to protect sensitive wildlife. Each site depicted on these maps is identified by a unique number in order to facilitate the process of communicating Flight Restriction Zone recommendations to the Operations Section in ICS. The tables accompanying the wildlife maps present information on the season(s) during which sites may be particularly sensitive to disturbance.

The fish/shellfish/marine habitat maps present general information on the location of baitfish spawning beaches, herring spawning areas, streams used by anadromous salmonids, hardshell clam concentrations, and kelp and eelgrass beds. This information will be most useful to personnel involved in assessing initial risks to fish and shellfish resources and to those conducting initial beach reconnaissance, pending availability of more detailed resource information and the formation of SCAT teams.

Because the operational uses of this information differ from those of the wildlife data, individual site identification numbers have not been assigned. Tables associated with these maps will identify the seasonal sensitivity of each resource. In addition, notes accompanying each table will provide information on the general distribution and seasonal sensitivity of those resources that are not mapped but may occur anywhere in the GRP region (ex. juvenile salmonids in shallow nearshore waters).

6. Sensitive Resource Description

6.1. Fish and Wildlife*

Washington's outer coast possesses a variety of features which contribute to making the area especially valuable to fish and wildlife. These include a wide diversity of shoreline habitats, the presence of abundant food resources, exceptional water quality, minimal human disturbance, and the presence of nearshore kelp beds, rocks, islands, and reefs.

This region possesses most our state's significant seabird nesting colonies, our state's entire population of sea otters, and essential habitats for other marine mammals and birds. The area is also a temporary home to many such species that are seasonal residents or pass through the area during their migrations. Marine fish and invertebrates of the area, in addition to their own inherent value, provide an ample food base for these diverse and abundant populations of marine birds and mammals.

Birds

The coast of Washington teems with birds year around. Just offshore, a string of rocky, windswept islands from Cape Flattery to Point Grenville hosts large colonies of seabirds. Some of the more important of these inaccessible islands include Tatoosh, Bodelteh, Carroll, Jagged, Quillayute Needles, Alexander, Destruction, Willoughby, Split, and the islands in the vicinity of Point Grenville. Three species of cormorants, Glaucouswinged Gulls and Common Murres breed on the islands' exposed, rocky ledges and flats. Other birds including Leach's and Fork-tailed Storm-petrels, Rhinoceros and Cassin's Auklets, and Tufted Puffins dig nesting burrows into the soft soil on the crests of the islands. Thousands of these seabirds were killed during the *Nestucca* and *Tenyo Maru* oil spills.

Many species that breed in other parts of the world spend a portion of their year along Washington's coast. Numerous species of loons, grebes, albatrosses, shearwaters, waterfowl, gulls and terns can be found foraging from the surf line to many miles offshore. While some species may be quite rare, others such as the Sooty Shearwater can number over one hundred thousand during the summer and fall months. Shorebirds can be found along most beaches, with their numbers highest from mid August through mid May. Sand and mud beaches are used by species including Sanderlings, Dunlins and Black-bellied Plovers. Black Turnstones and Surfbirds will use rocky shorelines and jetties. Black Oystercatchers, the only shorebird to breed in Washington's saltwater environment, can be found in all seasons on the rocky, intertidal habitats. The Marbled Murrelet, Bald Eagle, and Peregrine Falcon are three coastal breeders that are federally listed as Threatened or Endangered. All three are vulnerable during an oil spill. The murrelet by direct contact with oil while swimming and the two raptors by feeding on beached, oiled birds.

Marine Mammals

Six species of whales and dolphins regularly occur in this region's nearshore zone. The entire U.S population of gray whales migrates through Washington waters in the spring and fall. Many stop to feed intensively in shallow coastal waters during the northward migration in spring. Some individuals stay behind and inhabit Washington waters throughout the summer. Humpback whales are found in our waters primarily during the summer months and tend to concentrate west of the entrance to the Strait of Juan de Fuca. Harbor porpoise are common year round and may be found from the surf zone out to several miles offshore. Orcas, Dall's porpoise, and minke whales, while common residents, are less commonly observed because they tend to be more patchily distributed and generally occur further offshore. Numerous other species of whales or dolphins either occur further offshore (closer to the continental shelf) or have been recorded as rare or accidental within the region.

^{*} Generated for the GRP by the Spill Response and Resource Protection Team of the Washington Department of Fish and Wildlife

With regard to seals and sea lions, this region is home to one permanent resident, the harbor seal. The islands and nearshore rocks of this region provide both pupping and resting sites for this, the most numerous of our state's pinnipeds. The largest seal haulouts occur at Destruction Island, Giant's Graveyard, Cape Johnson, and Cape Alava. Four additional species of pinniped occur as regular seasonal residents or migrants. These are the Steller sea lion (federally listed as threatened), California sea lion, northern fur seal, and northern elephant seal. As in the case of harbor seals, both sea lion species use nearshore islands and rocks as resting sites. Fur seals and elephant seals, on the other hand, very rarely come ashore in this area unless they are in distress. They instead occur further offshore where they both feed and rest in the water.

Washington's entire sea otter population, currently estimated at about 400 animals, occupies a range that extends roughly from Destruction Island to Cape Flattery. They are most commonly found within a mile or two of shore, especially in areas where beds of giant kelp occur. Here they feed on a wide variety of bottom-dwelling invertebrates. Because a sea otter's fur is its only protection against cold ocean waters, it is especially vulnerable to the effects of oiling - much more so than any other marine mammal. Washington's sea otter population is especially vulnerable because of its limited geographic range. This region also supports a large population of river otters which, although not classified as marine mammals, are largely marine in their habits. Most commonly found near the mouths of freshwater streams or along beaches, these animals also frequently swim in the intertidal zone and have been found as far as 3 miles offshore on Destruction Island.

Fish

The outer coast contains significant commercial and recreational fish resources. Nearshore kelp beds provide diverse habitat and offer protection to juvenile fish. Many species of rockfish dominate this kelp habitat, along with lingcod, kelp greenling, wolf eel, and cabezon. Chinook, Coho, Sockeye, Pink, and Chum salmon, as well as steelhead and sea-run cutthroat trout, inhabit outer coast waters. Other important fish in this area include albacore tuna, halibut, Pacific hake, Pacific cod, sablefish, pollock, and spiny dogfish. Tidepool sculpin, gunnels, pricklebacks, and other small fish thrive in the dynamic rocky intertidal zones. Flounder, sand lance, sole, sanddab, surf perch, and surf smelt are associated with sandy intertidal and subtidal habitat.

Marine Invertebrates

Cold, nutrient-rich upwelling off the outer coast nourishes high plant productivity nearshore, providing food and habitat for many invertebrates. Kelp beds and rocky reefs support subtidal invertebrates such as abalone, octopus, and scallops. Invertebrate diversity peaks in rocky intertidal areas, which hosts animals such as sponges, isopods, amphipods, barnacles, various bivalves, sea urchins, sea cucumbers, sea stars, polychaete worms, crabs, snails, and colorful nudibranchs. Other important intertidal invertebrates on the outer coast include sand dollars, Dungeness crabs, mud shrimp, and razor clams. In fact, the majority of recreational harvesting of razor clams in the contiguous United States occurs on Washington's outer coast.

6.2. Other Resources

Over 120 species of algae have been identified in the rocky intertidal areas of Washington's outer coast. Two species of brown algae dominate the extensive kelp forests of this area - bull kelp (*Nereocystis leutkeana*) and giant kelp (*Macrocystis intergrifolia*). Bull kelp tends to inhabit more protected inshore waters, while giant kelp occurs in more exposed areas. Both species play a critical role in providing shelter and food resources to outer coast fish and wildlife.

The entire outer coast offers valuable recreational experiences - from the pristine wilderness shoreline protected within Olympic National Park to popular state park camping and shellfish gathering sites to the south. The early presence of humans in this area has also resulted in many sensitive archaeological/cultural sites - particularly in the vicinity of Cape Flattery, Cape Alava, and La Push. In addition to shell middens,

petroglyphs, and artifacts, the outer coast also hosts a number of less apparent sites which have important religious, traditional, historic, or subsistence values to local tribes.

6.3. Flight Restriction Zones

Flight restriction zones have been designated in the GRP to minimize disturbance to certain wildlife species. An identified location could represent a marine mammal haulout site, a seabird or heron colony, or the individual nest of a sensitive species such as bald eagle. While some zones may be restricted year around, others will be in effect only during the months listed in the matrix.

In general, the no-fly bubble is the area within a 1,500 foot radius and below 1,000 feet in altitude around the location. However, restrictions on flight are greater in this GRP zone due to the presence of the Olympic Coast National Marine Sanctuary, Olympic National Park, and the numerous National Wildlife Refuge sites in this area. Therefore, non-emergency response aircraft must stay above 2,000 feet in elevation within one nautical mile of shore or offshore islands unless otherwise authorized. All aircraft, including those from the government, contractors or media, are expected to avoid these zones when restrictions are in effect. During oil spills, pilots are also asked to avoid disturbing any large concentrations of birds and other wildlife. By keeping a safe distance or altitude, pilots can prevent the accidental hazing of unaffected wildlife into oiled areas and minimize the risk of aircraft/ bird collisions. Due to the density of coastal eagle nests in this region, pilots are asked to avoid low altitude flights over treeline adjacent to the beach. In addition to flight restrictions, boat and ground crews must also remain at least 200 yards away from the boundaries of any offshore National Wildlife Refuge rocks/islands or sensitive areas identified in Section 6.5. Tribal authorities also request notification when overflights may affect culturally-sensitive areas within reservation boundaries.

6.4. Hazing

Hazing or directed harassment, is a method used to drive or herd wildlife out of an area where they are at risk of becoming oiled. Hazing techniques include the use of visual and audio devices, personnel for herding, vessels and aircraft. In the right circumstances it can be effective in protecting some wildlife species. In other cases it can be disastrous as unaffected wildlife can be driven into oiled areas, or forced to abandon nests or young.

National Marine Fisheries Service staff or their designees will perform all hazing of marine mammals other than sea otters. Before hazing can begin for all other species of wildlife, clearance must be obtained from the Washington Department of Fisheries and Wildlife and the United States Fish and Wildlife Service. All hazing efforts during a spill will be directed by these agencies. The deliberate harassment of wildlife without first securing permission from these agencies is a violation of Federal and State laws.

The following information must be provided for a determination on whether hazing might be authorized in a given situation.

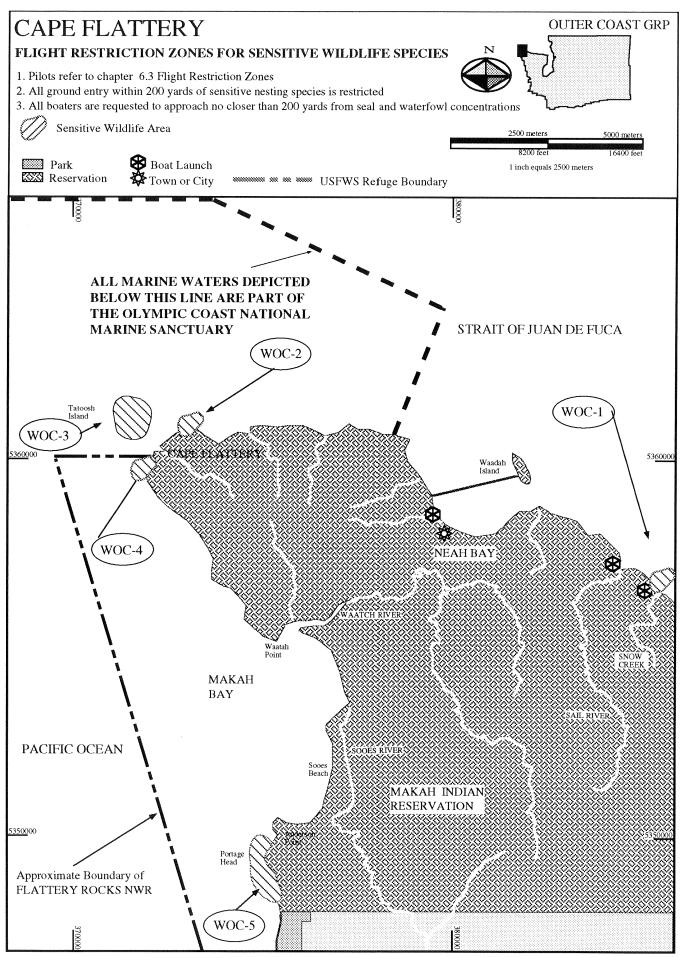
- 1. Description of the situation where hazing authorization is being sought
- 2. Location to be hazed
- 3. Species of wildlife to be hazed and number of animals
- 4. Methods and equipment used
- 5. Date and time of hazing
- 6. Name, phone number, radio frequency, pager number and the amount of hazing experience of the individual requesting permission

The responsible agencies will evaluate each request on a case by case basis. All hazing of marine mammals, threatened and endangered species, and all hazing by aircraft will be performed only under authority and general supervision of WDF&W, USFWS, NMFS or persons designated by these agencies. Representatives of these agencies can be contacted through the planning section of the Unified Command System during the spill event.

Includes half the month CAPE FLATTERY FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE NOAA Chart 18480 Marine Sea Otter Sensitive & Kelp Flight Seabird | Seabird | Waterfowl Mammal Nesting Restriction | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec Bed Colony Conc Conc Haulout Species Code Location Yes Seal & Sail Rocks WOC-1 Yes WOC-2 Yes Yes Mushroom Rock Yes WOC-3 Tatoosh Island Yes Yes Yes Yes WOC-4 Fuca Pillar Yes Yes Yes Yes WOC-5 Portage Head FLIGHT AND GROUND ENTRY RESTRICTIONS Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones Sensitive season - Minimize overflight disturbance Note: Within boundaries of Outer Coast National Marine Sanctuary and Olympic National Park, non-emergency

flights within 2,000 feet of ground level, and landings along coast and islands must receive prior clearance

Flight Restriction Zones/Sensitive Wildlife



Includes half the month

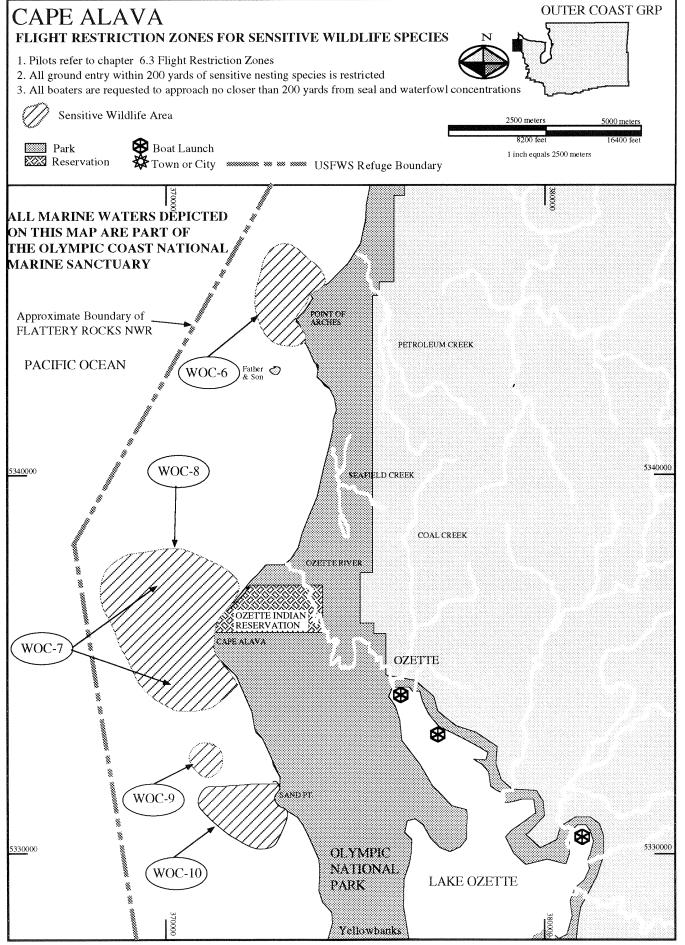
CAPE ALAVA FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE

					Marine	Sensitive	Sea Otter													
		Seabird	Seabird	Waterfowl	Mammal	Nesting	& Kelp	Flight												
Code	Location	Colony	Conc	Conc	Haulout	Species	Bed	Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WOC-6	Point of Arches					Yes		Yes												
	Ozette/Bodelteh																			
WOC-7	Islands	Yes	Yes		Yes	Yes	Yes	Yes												
WOC-8	Cape Alava	Yes	Yes		Yes	Yes	Yes	Yes												
WOC-9	White Rock	Yes	Yes					Yes				111								
WOC-10	Sand Point				Yes		Yes	Yes								L II				İ

FLIGHT AND GROUND ENTRY RESTRICTIONS

Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

Sensitive season - Minimize overflight disturbance



Includes half the month

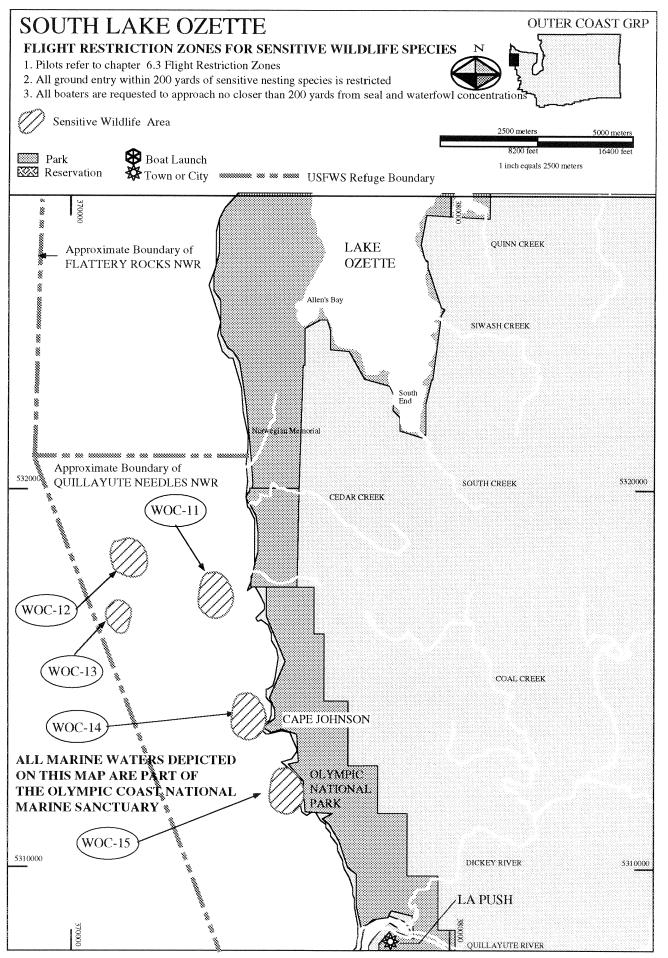
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		Seabird	Seabird	Waterfowl	Mammal	Nesting	& Kelp	Flight											ı	
Code	Location	Colony	Conc	Conc	Haulout	Species	Bed	Restriction	Jan	Feb	Mar	Apr N	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WOC-11	Jagged Island	Yes				Yes	Yes	Yes												1
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WOC-12	Carroll Islands	Yes	Yes		Yes			Yes												
					W 2															
WOC-13	Sea Lion Rock	Yes	Yes		Yes			Yes								<u>.</u>	1	Was in	er-each	
	NW of Cape																			
WOC-14	Johnson Rocks					Yes	Yes													
	SW of Cape																		l	
WOC-15	Johnson Rocks					Yes	Yes													

FLIGHT AND GROUND ENTRY RESTRICTIONS

Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

Sensitive season - Minimize overflight disturbance



January 15, 1996

Includes half the month

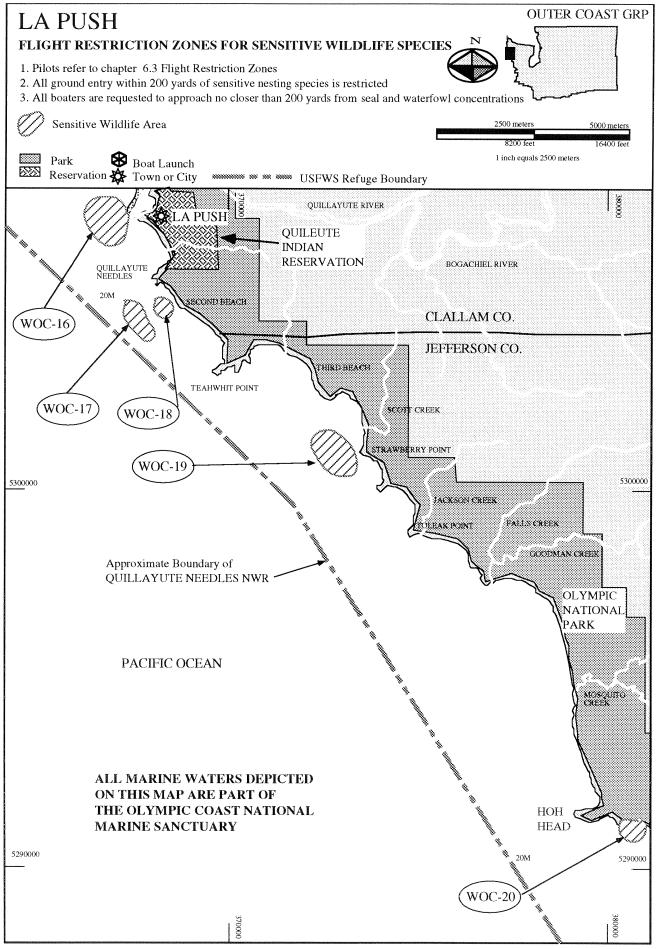
LA PUSH FLIGHT RESTRICTION ZONES / SENSITIVE WILDLIFE

NOAA CI	nart 18480										***************************************									
					Marine	Sensitive	Sea Otter													-
		Seabird	Seabird	Waterfowl	Mammal	Nesting	& Kelp	Flight												
Code	Location	Colony	Conc	Conc	Haulout	Species	Bed	Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	James Island																			
WOC-16	Complex	Yes				Yes		Yes												
WOC-17	Quillayute																			
WOC-18	Needles	Yes	Yes		Yes	Yes	Yes	Yes												
WOC-19	Giants Graveyard				Yes	Yes	Yes	Yes												<u> </u>
	Headland east of																			
WOC-20	Hoh Head					Yes		Yes		8.00	See See		entire en la							

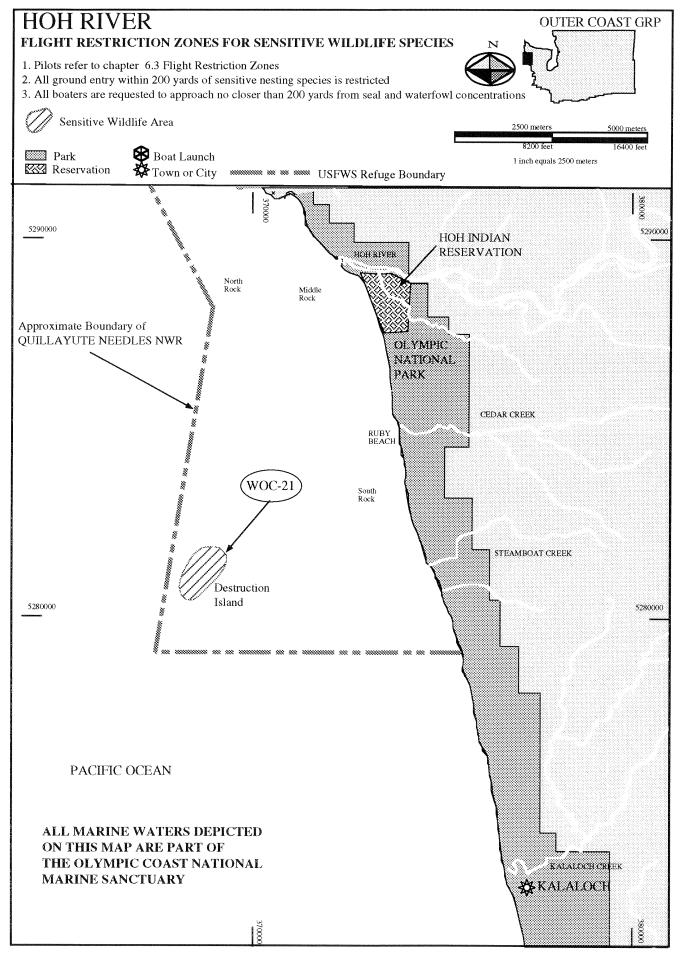
FLIGHT AND GROUND ENTRY RESTRICTIONS

Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

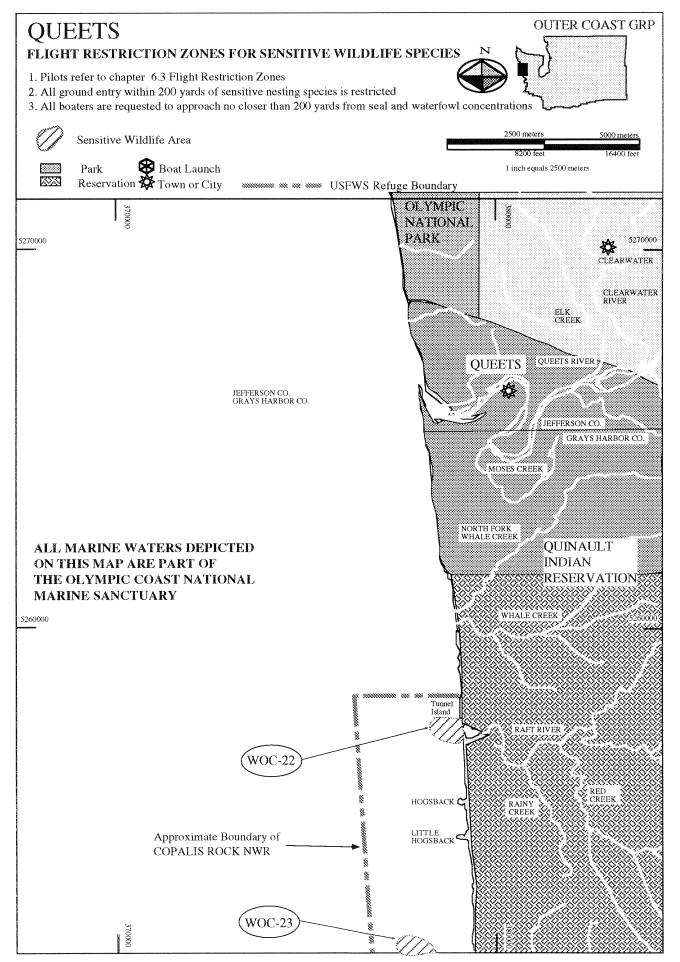
Sensitive season - Minimize overflight disturbance



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WOC-22	Tunnel Island	Yes		Yes		Yes		Yes											
WOC-23	Split/Willoughby Rocks/Rock 535	Yes	Yes		Yes			Yes											
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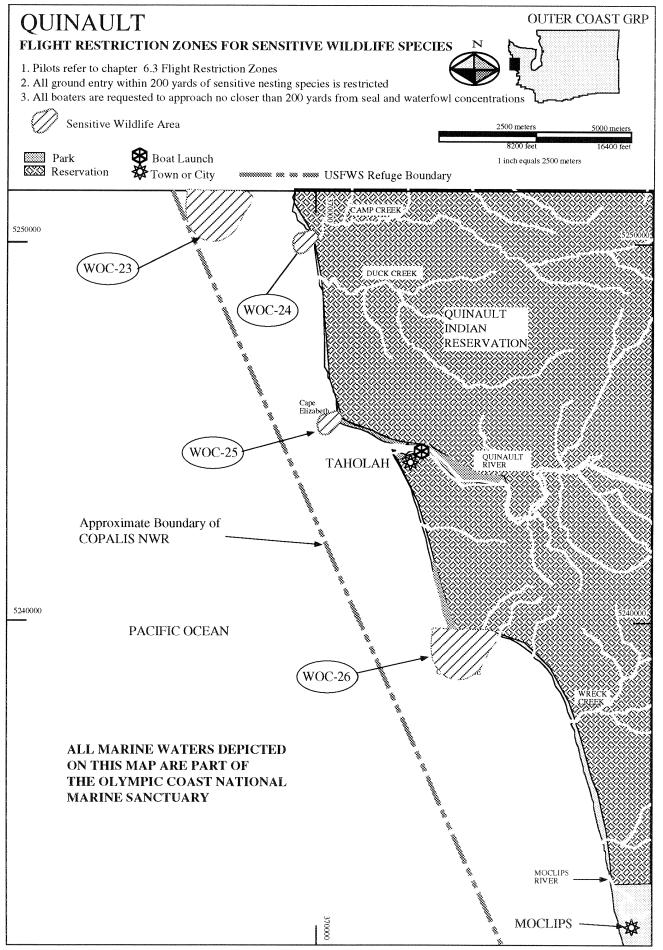
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					Marine	Sensitive	Sea Otter													
		Seabird	Seabird	Waterfowl	Mammal	Nesting	& Kelp	Flight												
Code	Location	Colony	Conc	Conc	Haulout	Species	Bed	Restriction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Split/Willoughby Rocks/Rock 535	Yes	Yes		Yes			Yes												
WOC-24	Pratt Cliff					Yes		Yes												
WOC-25	Cape Elizabeth				Yes	Yes			and the second			liniki ni			10.26					
WOC-26	Point Grenville	Yes	Yes					Yes												

FLIGHT AND GROUND ENTRY RESTRICTIONS

Flights below 1000 feet require clearance: See appendix on Flight Restriction Zones

Sensitive season - Minimize overflight disturbance



January 15, 1996

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		Copalis River																			
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